

BIOL 102: General Biology - Lecture
Spring Washington State University, Vancouver

Biology 102 Lecture (69906)

M,W 1:25-2:40

VADM 110

Instructor

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Office: VELS 117

Office Hours: TBA

Email: through Blackboard

Course Description

Welcome to BIOL 102: General Biology for non-majors. This course is an introductory course for non-majors that provides a foundation in molecular, cellular, organismal, and ecosystem biology in an evolutionary context and ecological framework. In this course, you will learn about the nature of living things, methods, and function of diverse organisms. In lecture, you will be introduced to a few of the many fascinating biological principles and applications, and will get to put these theories into hands-on practice in the lab and group project portion of the course. Students will gain an understanding of the scientific method, including experimentation and data interpretations involving biological, mathematical, and/or physical systems. Laboratory experience satisfying the laboratory credit requirement focuses on the interplay among hypothesis, observation, experiment theory, and understanding.

Course Information

4 credits. Not open to students who have taken a college-level course in general biology or botany. Credit not granted for Biol 102 and 101, 107 or 105.

This is a General Education course that fulfills 3 credits of biological science [B] and one credit of biological laboratory science [L] for General Education Requirements. As such, it follows the **WSU Vancouver Campus Theme, *Global Change in a Local Context***. As we study fundamental biological concepts, we will be exploring the relationship of science to social, environmental, political, and cultural change.

There will be a substantial amount of written work in this course. Written lecture and laboratory assignments fulfill the writing requirements for general education courses. Some of these assignments and the course project will be posted in your electronic portfolio (e-portfolio). See <http://wsu.van.rsmart.com/portal> for more information

Required Materials

Textbook:

Biology: Today and Tomorrow

Starr, Evers, and Starr, 2nd edition, 2007

Thomson/Brooks Cole Publishing

Learning Goals: Biol 102 is designed to address some of WSU's Learning Goals: Critical Thinking; Quantitative and Symbolic Reasoning; Information Literacy; Communication; Self in Society; and Specialty. Upon completion of this course, students should be able to:

-Construct and use knowledge claims of evidence and context to reason ethically and reach conclusions as well as to innovate in imaginative ways. These steps are equally applicable to different kinds of problems such as scientific theory development and testing, ethical problem solving, and innovation (Critical Thinking).

-Use a disciplined and systematic approach to accessing, evaluating and using information (Information Literacy).

-Write, speak and listen to achieve intended and meaningful understanding (Communication).

Course Linkage:

This course links to GE 105 [V]: Land, River, Sea: People and the Watershed I.

Course Objectives

- Develop methods of scientific inquiry, observation and measurement.
- Relate the basic principles of chemistry to biology at the cellular, organismal, and ecosystem levels.
- Learn the language of biology and correctly use terms in written and oral communication.
- Compare the mechanisms of evolution, and analyze the evidence in support of evolutionary theory.
- Describe characteristics that define life and discuss biological organization extending from molecules to ecosystems.
- Compare and contrast prokaryotic and eukaryotic cells with regard to structure and function, illustrate traffic across membranes, and inspect the acquisition and use of energy in metabolic processes.
- Diagram mitosis, meiosis, and the flow of information from genes to protein.
- Demonstrate Mendelian principles of inheritance, and evaluate the significance of DNA technology.
- Examine how structure correlates with function at all levels of hierarchical organization.
- Evaluate the interactions between organisms and the interactions organisms have with their environment.
- Analyze the various mechanisms by which organisms maintain homeostasis. Describe the unity and diversity of all organisms within the Kingdoms and Domains of classification.
- Relate the interdependent nature of science to technology, and evaluate the role of society in shaping the application of scientific knowledge.
- Engage in the collection of data using various measures, apply scientific methods to investigate biological principles, observe phenomena, test hypotheses, solve problems, and report in scientific format.
- Demonstrate proficient understanding of the principles of microscopy in the study of cells and microorganisms.

Blackboard:

- To access Blackboard, go to <http://www.blackboard.wsu.edu/>
- Use your Network ID and your WSU student number to login.
- Click on [Biol 102 Fall 2007](#)
- All information (e.g. syllabi, lecture notes, study guides, lab handouts, assignments, grades, etc.) regarding the course will be available to you on Blackboard. In addition, this is how you can contact me (and other classmates if you would like).
- Please note: You are responsible for all information posted on Blackboard. Please check it regularly.***
- Please make sure that your account is set up properly during the *first week of class*. If you need help, go to <http://www.vancouver.wsu.edu/vis/vit/accounts.htm#blackboard> or call the helpdesk at (360) 546-9770.

Lecture Organization

- Lectures are normally delivered in PowerPoint. These will be available to you on Blackboard. If you chose to use them, you must download them and bring them to class.
- The lecture schedule is tentative. I may alter the schedule to better fit the needs of the class.

Methods of Assessment:

Comprehension, retention, and integration of material presented in this course will be assessed in a variety of ways, including (but not limited to) exams, quizzes, assignments, papers, and discussion.

Exams (300 points (best 3 of 4))

There are 3 exams, each worth 100 points. Your lowest exam score is dropped. If you miss an exam, it will be dropped as your lowest score. ***No makeup exams – no exceptions.*** The exams are non-cumulative, and may include multiple choice, true/false, essay, and short-answer questions.

Exams will begin promptly at the beginning of class. If you come in late, you will only have the remaining time to take the exam. Anyone who is more than 15 minutes late may not be permitted to take the exam at my discretion.

Once you start any exam you will not be able to leave the classroom.

Final exam (150 points)

The first ~2/3 of final exam will cover the material since the last exam and the last ~1/3 will be cumulative in nature. **The final exam cannot be made up.** If you do not take the final exam you will receive an “F” for the semester. In very (very!) rare circumstances if you miss the final exam, you may receive an incomplete for the class. The incomplete can be resolved *ONLY* by taking the final exam the following semester.

Lecture assignments, in-class activities, pop quizzes, etc. (50 points)

A number of graded activities, writing assignments, discussions, pop-quizzes, etc. will take place and/or be assigned during lecture throughout the course. *In-class assignments cannot be made up if you are absent.* If you are absent, it is your responsibility to check Blackboard to determine if any work was assigned.

Points for these assignments are variable.

Minipapers (100 points)

You are to write 2 “mini-papers” which address topics from your text book (See handout on Bb for topics and more details). Each paper is worth 50 points.

See schedule for due dates.

Debate (100 points)

For this assignment, you will research *both sides* of an environmental issue. In addition, you will be asked to determine how your own community is impacted by this issue as well as its importance worldwide (*Global Change in a Local Context!*). You will then present your research both in a debate (20 points) and a paper (70 points). 10 points will be assigned to you by your teammates. See handout on Bb for more details.

Debate questions:

Is biodiversity overprotected?

Should the Arctic National Wildlife Refuge (or other protected areas) be open to oil drilling?

Is it time to revive nuclear power in the US?

Should society act now to forestall global warming?

Is limiting population growth a key factor in protecting the global environment?

Is genetic engineering an environmentally sound way to increase food production?

Biology in the News (50 points)

In the first 2 weeks of class, find 5 articles about biology. Write a 0.25 – 1 page summary of the article plus a 0.25 – 0.5 page opinion summary of the topic (i.e., what did you think of the topic talked about in the article? Does it or will it affect you personally? Does it impact your community?). Come to class prepared to discuss your article!

Each summary must include a full citation of the article in APA format to receive credit. This assignment must be done individually, without collaboration with classmates or anyone else.

Written assignments (including Lecture assignments (done outside of class), Minipapers, Debate paper, and Biology in the News)

All written assignments must be typed (Times New Roman, 12pt font, double-spaced, 1" margins), and must be written in APA format (see http://owl.english.purdue.edu/handouts/print/research/r_apa.html for help with writing in APA format).

All sources, including the textbook, must be cited in APA format. You may use internet sources but they must be reputable (i.e. you cannot use wikipedia).

Avoid use of quotation marks.

You should use your own words throughout your paper to show your ability to interpret and integrate material. In addition to submitting hard copies, students are encouraged to submit and store copies of all work on their **e-portfolio**.

Late policy

All assignments must be turned in to me *at the beginning* of class on the due date. I will *not* accept assignments by email – *no exceptions!* If you turn your assignment in late on the due date (even if you are just tardy!), your assignment will be marked down 10%. If you turn your assignment in one class day late, it will be marked down 25%. If you turn in your assignment, two class days late (i.e. one week), it will be marked down 50%. I will not accept papers past one week after their due date.

Summary

Lecture (750 points total)

3 exams @ 100 points each (best 3 of 4)	300
Final exam	150
Lecture assignments and activities	50
Minipapers (2@50 points each)	100
Debate	100
Biology in the News	50

Lab (250 points total)

See lab syllabus

Grading

At the end of the semester, your final grade is computed on the basis of total points you earn. Grades are assigned as follows:

A=950-1000; A-=900-949; B+=870-899; B=830-869; B-=800-829; C+=770-799; C=730-769; C-=700-729; D+=670-699; D=600-669; F=599 and below

Depending on the grade distributions, I *may* curve exam grades. Since I drop your lowest test score, I won't know the grade distribution until after your last exam. I will make decisions about the curve (if any) after your last unit exam.

Student Conduct and Classroom Behavior

All students are expected to behave appropriately and in a manner consistent the high standards of scholarship and conduct expected by the university (both on- and off-campus). When students violate the standards of conduct or academic integrity standards defined in the Student Handbook, they are subject to the university disciplinary process as defined in the Student Handbook. The Student Handbook can be found at <http://www.vancouver.wsu.edu/ss/handbook/>

Unless you have discussed particular circumstances with me, **turn off all cell phones and beepers *before entering the classroom!!* If I see or hear your phone or beeper once class starts, I will deduct 5 points from your score.**

If a student engages in disruptive behavior (such as talking while I or another student is talking), I may deduct points. If the behavior is severe enough, I may remove you from class and report you to the appropriate authorities.

Academic Integrity and Plagiarism:

There is *zero tolerance* for plagiarism and cheating in this course and at this university. Everything you submit in this class *must be your own work*. If you are caught plagiarizing or cheating on any part of an assignment, activity, quiz, lab, or exam, you will receive an F for that work and you will lose at least one letter grade from your final score in the class. In addition, I will report you to the Associate Director of Student Services.

If you are still unsure what constitutes plagiarism, please contact me or check out the following website: <http://www.wsulibs.wsu.edu/plagiarism/main.html>

Special Accommodations

Please notify me during the first week of class of any accommodations needed for the course. Late notification may cause the requested accommodations to be unavailable.

Reasonable accommodations are available for students with documented disabilities. If you have any special circumstances that need to be addressed, please talk to me about them during the first week of classes so that I may accommodate. Students needing accommodations *must have them approved* through the Assistant Director of Student Development (VMMC 24, 546-9567). For more information, visit <http://www.vancouver.wsu.edu/ss/disability.htm>

Without approval from the Assistant Director of Student Development, I am unable to make the requested accommodation.

Copyright policy:

WSU requires all users of campus services to comply with all state and federal laws including copyright laws. For more information, see: <http://publishing.wsu.edu/copyright/>

Weather Policy:

For emergency weather closure policy, see: <http://www.vancouver.wsu.edu/adm/fo/psafety/weather.htm>

Evacuation Policy:

Emergency evacuation plans are posted in each classroom. Read and be familiar with these plans. In case of emergency, follow these instructions.

Tips for success

Take advantage of the resources available to you. There are many services available to help you in all aspects of your education. Information and Academic Support facilitates the transition of newly admitted and newly enrolled undergraduate students, promotes academic success by providing a supportive environment for continuing students, and serves as a central information and referral source for students to campus services, resources and academic advisers.

I recommend you attend one or more of the Academic Success and Study Skills Workshops through the Student Resource Center <http://www.vancouver.wsu.edu/ss/src/>

This course will have a Supplemental Instruction (SI) Leader to facilitate student learning and offer assistance with a particular subject matter. Additional fee-based tutoring is available through the Student Resource Center. See <http://www.vancouver.wsu.edu/ss/src/tutor/> for more information.

Figure out and use your learning strengths. Knowing your learning style can help you in any class. Some people learn best by reading, others by writing, others by drawing, and others by talking. Use the techniques that work best for you.

To learn more about student learning styles, go to <http://www.learning-styles-online.com/>, or http://www.metamath.com/multiple/multiple_choice_questions.html.

Be an active learner. Come to all lectures. While you take notes in class, write down questions you have about the lecture or which are brought to mind by the lecture. Identify points in the lecture that you think are the main points. Review your notes shortly after class. Compare notes with a classmate. Do your notes agree? While you read, pause and reflect on the material. How does it fit with what you know already? Finally, combine the information from the lecture and the text into one set of complete notes to review and study from.

Spend time on this course. Schedule and spend time at least every other day to read and review course materials, re-write your notes and think. Much of this course builds upon earlier portions of the course. Try not to fall behind.

Ask us for help if you get confused. The instructional team is here to help you learn the material.

For more information and advice, see handout on Bb.

Lecture Schedule Spring 2008

Week	Date	Lecture Topic*	Reading	Assignment due*
1	1/7 (M)	Invitation to Biology	Ch 1	
	1/9 (W)	Molecules of Life	Ch 2	
2	1/14 (M)	Molecules of Life/Cells	Ch 2, 3	
	1/16 (W)	How Cells are Put together	Ch 3	
3	1/21 (M)	NO CLASS		
	1/23 (W)	EXAM 1 (Ch 1-3)		Biology in the News
4	1/28 (M)	How Cells work	Ch 4	
	1/30 (W)	Photosynthesis	Ch 5	
5	2/4 (M)	Photosynthesis/Cell Respiration	Ch 5, Ch 6	
	2/6 (W)	Cell Respiration	Ch 6	
6	2/11 (M)	Cell Respiration/Cellular Reproduction-Mitosis	Ch 6, Ch 7	
	2/13 (W)	Cellular Reproduction-Mitosis	Ch 7	
7	2/18 (M)	NO CLASS		
	2/20 (W)	EXAM 2 (Ch 4-7)		Minipaper 1
8	2/25 (M)	Cell Reproduction-Meiosis/Heredity	Ch 7, 8	
	2/27 (W)	Heredity	Ch 8	
9	3/3 (M)	DNA Structure and Function	Ch 9	
	3/5 (W)	DNA Structure and Function, Gene Expression	Ch 10	
10	3/10 (M)	NO CLASS		
	3/12 (W)	NO CLASS		
11	3/17 (M)	EXAM 3 (Ch 8-11)		
	3/19 (W)	Processes of Evolution	Ch 12	
12	3/24 (M)	Evolutionary Patterns, Rates, and Trends	Ch 13	
	3/26 (W)	Evolutionary Patterns/ Early Life	Ch 13, Ch 14	
13	3/31 (M)	Early Life/Plant Evolution	Ch 14	
	4/2 (W)	Plant and Animal Evolution	Ch 15, Ch 16	
14	4/7 (M)	EXAM 4 (Ch 12-16)		Minipaper 2
	4/9 (W)	Animal Evolution	Ch 16	
15	4/14 (M)	Population Ecology	Ch 28	
	4/16 (W)	Community Ecology and Biodiversity	Ch 29	
16	4/21 (M)	Ecosystems	Ch 30	
	4/23 (W)	The Biosphere	Ch 31	
17	TBA	Final Exam (Ch 16, 28-31 + comprehensive)		

*This schedule is subject to change